

# OBSERVATIONS & RECOMMENDATIONS

After reviewing data collected from **Blaisdell Lake, Sutton**, the program coordinators have made the following observations and recommendations.

Thank you for your continued hard work sampling the lake this year! Your monitoring group sampled the deep spot **four** times this year and has done so for many years! As you know, conducting multiple sampling events each year enables DES to more accurately detect water quality changes. Keep up the good work!

We encourage you monitoring group to continue utilizing the Colby Sawyer College Water Quality Laboratory in New London. This laboratory was established to serve the large number of lakes/ponds in the greater Lake Sunapee region of the state. This laboratory is inspected by DES and operates under a DES approved quality assurance plan. We encourage your monitoring group to utilize this laboratory next summer for all sampling events, except for the annual DES biologist visit. To find out more about the Colby Sawyer College Water Quality Laboratory, and/or to schedule dates to pick up bottles and equipment, please call Bonnie Lewis, laboratory manager, at (603) 526-3486.

## FIGURE INTERPRETATION

### CHLOROPHYLL-A

- **Figure 1 and Table 1:** Figure 1 in Appendix A depicts the historical and current year chlorophyll-a concentration in the water column. Table 1 in Appendix B lists the minimum, maximum, and mean concentration for each year that the lake has been monitored through VLAP.

Chlorophyll-a, a pigment found in plants, is an indicator of the algal abundance. Algae (also known as phytoplankton) are typically microscopic, chlorophyll producing plants that naturally occur in lake ecosystems. The chlorophyll-a concentration measured in the water gives biologists an estimation of the algal concentration or lake

productivity. **The median summer chlorophyll-a concentration for New Hampshire's lakes and ponds is 4.58 mg/m<sup>3</sup>.**

The current year data (the top graph) show that the chlorophyll-a concentration *increased* from **May** to **August**, and then *decreased* from **August** to **October**.

The historical data (the bottom graph) show that the **2010** chlorophyll-a mean is *less than* the state and similar lake medians. For more information on the similar lake median, refer to Appendix F.

Overall, the statistical analysis of the historical data (the bottom graph) shows that the mean annual chlorophyll-a concentration has *not significantly changed* since monitoring began. Specifically, the mean annual chlorophyll-a concentration has *fluctuated between approximately 1.59 and 7.14 mg/m<sup>3</sup>*, but has *not continually increased or decreased* since **1986**. Please refer to Appendix E for a detailed statistical analysis explanation and data print-out.

While algae are naturally present in all lakes and ponds, an excessive or increasing amount of any type is not welcomed. In freshwater lakes and ponds, phosphorus is the nutrient that algae typically depend upon for growth in New Hampshire lakes. Algal concentrations may increase as nonpoint sources of phosphorus from the watershed increase, or as in-lake phosphorus sources increase. Therefore, it is extremely important for volunteer monitors to continually educate all watershed residents about management practices that can be implemented to minimize phosphorus loading to surface waters.

## TRANSPARENCY

- **Figure 2 and Tables 3a and 3b:** Figure 2 in Appendix A shows the historical and current year data for transparency with and without the use of a viewscope. Table 3a in Appendix B lists the minimum, maximum and mean transparency data without the use of a viewscope and Table 3b lists the minimum, maximum and mean transparency data with the use of a viewscope for each year that the lake has been monitored through VLAP.

Volunteer monitors use the Secchi disk, a 20 cm disk with alternating black and white quadrants, to measure how far a person can see into the water. Transparency, a measure of water clarity, can be affected by the amount of algae and sediment in the water, as well as the natural lake color of the water. **The median summer transparency for New Hampshire's lakes and ponds is 3.2 meters.**

The current year data (the top graph) show that the non-viewscope in-lake transparency **remained relatively stable** from **May** to **August**, and then **decreased** from **August** to **October**.

The historical data (the bottom graph) show that the **2010** mean non-viewscope transparency is ***much greater than*** the state and similar lake medians, and was the highest (best) mean transparency reading since monitoring began!. Please refer to Appendix F for more information about the similar lake median.

The current year data (the top graph) show that the viewscope in-lake transparency **decreased slightly** from **May** to **July**, **increased slightly** from **July** to **August**, and then **decreased** from **August** to **October**. The transparency measured with the viewscope was generally ***greater than*** the transparency measured without the viewscope this summer. A comparison of the transparency readings taken with and without the use of a viewscope shows that the viewscope typically increases the depth to which the Secchi disk can be seen into the lake, particularly on sunny and windy days. We recommend that your group measure Secchi disk transparency with and without the viewscope on each sampling event.

It is important to note that viewscope transparency data are not compared to a New Hampshire median or similar lake median. This is because lake transparency with the use of a viewscope has not been historically measured by DES. At some point in the future, the New Hampshire and similar lake medians for viewscope transparency will be calculated and added to the appropriate graphs.

Overall, the statistical analysis of the historical data (the bottom graph) shows that the mean annual in-lake non-viewscope transparency has ***not significantly changed*** (either *increased* or *decreased*) since monitoring began. Specifically, the in-lake transparency has remained ***relatively stable, ranging between approximately 4.67 and 6.40 meters*** since **1986**. Please refer to Appendix E for the statistical analysis explanation and data print-out.

Typically, high intensity rainfall causes sediment-laden stormwater runoff to flow into surface waters, thus increasing turbidity and decreasing clarity. Efforts to stabilize stream banks, lake and pond shorelines, disturbed soils within the watershed, and especially dirt roads located immediately adjacent to the edge of tributaries and the lake or pond should continue on an annual basis. Guides to best management practices that can be implemented to reduce, and possibly even eliminate, nonpoint source pollutants, are available from DES upon request.

## TOTAL PHOSPHORUS

- **Figure 3 and Table 8:** The graphs in Figure 3 in Appendix A show the amount of epilimnetic (upper layer) phosphorus and hypolimnetic (lower layer) phosphorus; the inset graphs show current year data. Table 8 in Appendix B lists the annual minimum, maximum, and median concentration for each deep spot layer and each tributary since the lake has been sampled through VLAP.

Phosphorus is typically the limiting nutrient for vascular aquatic plant and algae growth in New Hampshire's lakes and ponds. Excessive phosphorus in a lake or pond can lead to increased plant and algal growth over time. **The median summer total phosphorus concentration in the epilimnion (upper layer) of New Hampshire's lakes and ponds is 12 ug/L. The median summer phosphorus concentration in the hypolimnion (lower layer) is 14 ug/L.**

The current year data for the epilimnion (the top inset graph) show that the phosphorus concentration ***increased slightly*** from **May** to **July**, and then ***remained stable*** from **July** to **October**.

The historical data show that the **2010** mean epilimnetic phosphorus concentration is ***less than*** the state median and is ***approximately equal to*** the similar lake median. Refer to Appendix F for more information about the similar lake median.

The current year data for the hypolimnion (the bottom inset graph) show that the phosphorus concentration ***increased*** from **May** to **July**, and then ***decreased*** from **July** to **October**.

The hypolimnetic (lower layer) turbidity sample was ***slightly elevated*** on the **July and August** sampling events (**2.55 and 2.30 NTUs**). This suggests that the lake bottom may have been disturbed by the anchor or by the Kemmerer Bottle while sampling and/or that the lake bottom is covered by an easily disturbed thick organic layer of sediment. When the lake bottom is disturbed, phosphorus rich sediment is released into the water column. When collecting the hypolimnion sample, make sure that there is no sediment in the Kemmerer Bottle before filling the sample bottles.

The historical data show that the **2010** mean hypolimnetic phosphorus concentration is ***slightly less than*** the state median and is ***approximately equal to*** the similar lake median. Please refer to Appendix F for more information about the similar lake median.

Overall, the statistical analysis of the historical data shows that the epilimnetic (upper layer) phosphorus concentration has **not significantly changed** (either *increased* or *decreased*) since monitoring began. Specifically, the mean annual epilimnetic phosphorus concentration has remained **relatively stable, ranging between approximately 3 and 13 ug/L** since **1986**. Please refer to Appendix E for the statistical analysis explanation and data print-out.

Overall, the statistical analysis of the historical data shows that the hypolimnetic (lower layer) phosphorus concentration has **not significantly changed** since monitoring began. Specifically, the mean annual hypolimnetic phosphorus concentration has **fluctuated between approximately 8 and 26 ug/L** since **1986**. Please refer to Appendix E for the detailed statistical analysis explanation and data print-out.

One of the most important approaches to reducing phosphorus loading to a waterbody is to continually educate watershed residents about the watershed sources of phosphorus and how excessive phosphorus loading can negatively impact the ecology and the recreational, economical, and ecological value of lakes and ponds.

#### TABLE INTERPRETATION

➤ **Table 2: Phytoplankton**

Table 2 in Appendix B lists the current and historical phytoplankton and/or cyanobacteria observed in the lake. Specifically, this table lists the three most dominant phytoplankton and/or cyanobacteria observed in the sample and their relative abundance in the sample.

The dominant phytoplankton and/or cyanobacteria observed in the **July** sample were ***Asterionella* (Diatom)**, ***Synedra* (Diatom)**, and ***Rhizosolenia* (Diatom)**.

Phytoplankton populations undergo a natural succession during the growing season. Please refer to the “Biological Monitoring Parameters” section of this report for a more detailed explanation regarding seasonal plankton succession. Diatoms and golden-brown algae populations are typical in New Hampshire’s less productive lakes and ponds.

➤ **Table 4: pH**

Table 4 in Appendix B presents the in-lake and tributary current year and historical pH data.

pH is measured on a logarithmic scale of 0 (acidic) to 14 (basic). pH is important to the survival and reproduction of fish and other aquatic life. A pH below 6.0 typically limits the growth and reproduction of fish. A pH between 6.0 and 7.0 is ideal for fish. The median pH value for the epilimnion (upper layer) in New Hampshire's lakes and ponds is **6.6**, which indicates that the state surface waters are slightly acidic. For a more detailed explanation regarding pH, please refer to the "Chemical Monitoring Parameters" section of this report.

The mean pH at the deep spot this year ranged from **6.56** in the hypolimnion to **6.80** in the epilimnion, which means that the water is **slightly acidic**.

It is important to point out that the hypolimnetic (lower layer) pH was **lower (more acidic)** than in the epilimnion (upper layer). This increase in acidity near the lake bottom is likely due to the decomposition of organic matter and the release of acidic by-products into the water column.

➤ **Table 5: Acid Neutralizing Capacity**

Table 5 in Appendix B presents the current year and historical epilimnetic ANC for each year the lake has been monitored through VLAP.

Buffering capacity (ANC) describes the ability of a solution to resist changes in pH by neutralizing the acidic input. The median ANC value for New Hampshire's lakes and ponds is **4.8 mg/L**, which indicates that many lakes and ponds in the state are at least "moderately vulnerable" to acidic inputs. For a more detailed explanation about ANC, please refer to the "Chemical Monitoring Parameters" section of this report.

The mean acid neutralizing capacity (ANC) of the epilimnion (upper layer) was **7.0 mg/L**, which is **slightly greater than** the state median. In addition, this indicates that the lake is **moderately vulnerable** to acidic inputs.

➤ **Table 6: Conductivity**

Table 6 in Appendix B presents the current and historical conductivity values for tributaries and in-lake data. Conductivity is the numerical expression of the ability of water to carry an electric current, which is determined by the number of negatively charged ions from metals, salts, and minerals in the water column. The

median conductivity value for New Hampshire's lakes and ponds is **40.0 uMhos/cm**. For a more detailed explanation, please refer to the "Chemical Monitoring Parameters" section of this report.

The mean annual epilimnetic conductivity at the deep spot this year was **62.5 uMhos/cm**, which is **slightly greater than** the state median.

The conductivity has **increased slightly** in the lake and tributaries since monitoring began. In addition, the in-lake conductivity is **slightly greater than** the state median. Typically, increasing conductivity indicates the influence of pollutant sources associated with human activities. These sources include failed or marginally functioning septic systems, agricultural runoff, stormwater runoff, and road runoff which can contain road salt during the spring snow-melt. New development in the watershed can alter runoff patterns and expose new soil and bedrock areas, which could also contribute to increasing conductivity. In addition, natural sources, such as iron and manganese deposits in bedrock, can influence conductivity.

We recommend that your monitoring group conduct stream surveys and rain event sampling along tributaries with **elevated** conductivity to help identify the sources.

*For a detailed explanation on how to conduct rain event sampling and stream surveys, please refer to the 2002 VLAP Annual Report special topic article, which is posted on the VLAP website at <http://www.des.nh.gov/organization/divisions/water/wmb/vlap/categories/publications.htm>, or contact the VLAP Coordinator.*

It is possible that de-icing materials applied to nearby roadways during the winter months may be influencing the conductivity in the lake. In New Hampshire, the most commonly used de-icing material is salt (sodium chloride).

*A limited amount of chloride sampling was conducted during **2010**. Please refer to the discussion of **Table 13** for more information.*

Therefore, we recommend that the **epilimnion** (upper layer) be sampled for chloride next year. This additional sampling may help us identify what areas of the watershed are contributing to the increasing in-lake conductivity.

*Please note that the DES Limnology Center in Concord is able to conduct chloride analyses, free of charge. As a reminder, it is best to conduct chloride sampling in the spring as the snow is melting and during rain events.*

➤ **Table 8: Total Phosphorus**

Table 8 in Appendix B presents the current year and historical total phosphorus data for in-lake and tributary stations. Phosphorus is the nutrient that limits the ability of algae and aquatic plants to grow and reproduce. Please refer to the “Chemical Monitoring Parameters” section of this report for a more detailed explanation.

The phosphorus concentrations in **Billings Inlet, Brown Inlet, Bum Carter Cover, Outlet, and Russell Inlet** were *relatively low* this year, which is good news. Specifically, **Brown Inlet, Billings Inlet and Russell Inlet** have experienced a marked decrease in phosphorus concentrations since 2007. This may be a result of sampling the tributaries in a different location.

However, we recommend that your monitoring group sample the major tributaries to the lake during snow-melt and periodically during rainstorms to determine if the phosphorus concentration is *elevated* in the tributaries during these times. Typically, the majority of nutrient loading to a lake occurs in the spring during snow-melt and during intense rainstorms that cause soil erosion and surface runoff and within the watershed.

The total phosphorus concentration was *slightly elevated (15 and 19 ug/L)* in **North Shore Trib** this year. We recommend that your monitoring group conduct a stream survey and rain event sampling along this tributary so that we can determine what may be causing the elevated concentrations.

*For a detailed explanation on how to conduct rain event sampling and stream surveys, please refer to the 2002 VLAP Annual Report special topic article, which is posted on the VLAP website at <http://www.des.nh.gov/organization/divisions/water/wmb/vlap/categories/publications.htm>, or contact the VLAP Coordinator.*

➤ **Table 9 and Table 10: Dissolved Oxygen and Temperature Data**

Table 9 in Appendix B shows the dissolved oxygen/temperature profile(s) collected during **2010**. Table 10 in Appendix B shows the historical and current year dissolved oxygen concentration in the hypolimnion (lower layer). The presence of sufficient amounts of dissolved oxygen in the water column is vital to fish and amphibians and bottom-dwelling organisms. Please refer to the “Chemical Monitoring Parameters” section of this report for a more detailed explanation.

The dissolved oxygen concentration was greater than **100 percent**



saturation at the **surface, 1.0 and 4.0** meters at the deep spot on the **July** sampling event. Wave action from wind can also dissolve atmospheric oxygen into the upper layers of the water column, however wind conditions were very calm on the July sampling event. Layers of algae can also increase the dissolved oxygen in the water column, since oxygen is a by-product of photosynthesis. Considering that the depth of sunlight penetration into the water column was approximately **6.0** meters on this sampling event, as shown by the Secchi disk transparency depth, we suspect that an abundance of algae in the epilimnion and metalimnion caused the oxygen super-saturation.

The dissolved oxygen concentration was ***much lower in the hypolimnion (lower layer) than in the epilimnion (upper layer)*** at the deep spot on the **July** sampling event. As stratified lakes age, and as the summer progresses, oxygen typically becomes ***depleted*** in the hypolimnion by the process of decomposition. Specifically, the reduction of hypolimnetic oxygen is primarily a result of biological organisms using oxygen to break down organic matter, both in the water column and particularly at the bottom of the lake or pond where the water meets the sediment. When hypolimnetic oxygen concentration is depleted to less than 1 mg/L, ***as it was on the annual biologist visit this year and on many previous annual visits***, the phosphorus that is normally bound up in the sediment may be re-released into the water column, a process referred to as ***internal phosphorus loading***.

**Low** hypolimnetic oxygen levels are a sign of the lake's ***aging*** health. This year the DES biologist collected the dissolved oxygen profile in **July**. We recommend that the annual biologist visit for the **2011** sampling year be scheduled during **June** so that we can determine if oxygen is depleted in the hypolimnion ***earlier*** in the sampling year.

➤ **Table 11: Turbidity**

Table 11 in Appendix B lists the current year and historical data for in-lake and tributary turbidity. Turbidity in the water is caused by suspended matter, such as clay, silt, and algae. Water clarity is strongly influenced by turbidity. Please refer to the "Other Monitoring Parameters" section of this report for a more detailed explanation.

As discussed previously, the hypolimnetic (lower layer) turbidity was ***slightly elevated (2.55 and 2.30 NTUs)*** on the **July and August** sampling events. In addition, the hypolimnetic turbidity has been elevated on many sampling events during previous sampling years. This suggests that the lake bottom may have been disturbed by the anchor or by the Kemmerer Bottle while sampling and/or that the lake bottom is covered by an easily disturbed, thick organic layer of

sediment. When the lake bottom is disturbed, phosphorus rich sediment is released into the water column. When collecting the hypolimnion sample, make sure that there is no sediment in the Kemmerer Bottle before filling the sample bottles.

The turbidity in the **Brown Inlet, Outlet and Russell Inlet** samples was **slightly elevated (1.10, 1.25 and 1.52 NTUs)** on the **May** sampling event, which suggests that the stream bottom may have been disturbed while sampling or that erosion is occurring in this area of the watershed. Approximately **1.0 inch** of rainfall occurred **24 -72 hours** prior to the sampling event.

If you suspect erosion in the watershed, we recommend conducting a stream survey to identify sediment erosion. We also recommend that your monitoring group conduct rain event sampling along this tributary. This additional sampling may allow us to determine what is causing the **elevated** levels of turbidity.

*For a detailed explanation on how to conduct rain event sampling and stream surveys, please refer to the 2002 VLAP Annual Report special topic article, which is posted on the VLAP website at <http://www.des.nh.gov/organization/divisions/water/wmb/vlap/categories/publications.htm>, or contact the VLAP Coordinator.*

➤ **Table 12: Bacteria (*E.coli*)**

Table 12 in Appendix B lists the current year and historical data for bacteria (*E.coli*) testing. *E. coli* is a normal bacterium found in the large intestine of humans and other warm-blooded animals. *E.coli* is used as an indicator organism because it is easily cultured and its presence in the water, in defined amounts, indicates that sewage **may** be present. If sewage is present in the water, potentially harmful disease-causing organisms **may** also be present.

Bacteria sampling was not conducted this year. If residents are concerned about sources of bacteria such as failing septic systems, animal waste, or waterfowl waste, it is best to conduct *E. coli* testing when the water table is high, when beach use is heavy, or immediately after rain events.

➤ **Table 13: Chloride**

Table 13 in Appendix B lists the current year and the historical data for chloride sampling. The chloride ion (Cl<sup>-</sup>) is found naturally in some surfacewaters and groundwaters and in high concentrations in seawater. Research has shown that elevated chloride levels can be toxic to freshwater aquatic life. In order to protect freshwater aquatic

life in New Hampshire, the state has adopted **acute and chronic** chloride criteria of **860 and 230 mg/L** respectively. The chloride content in New Hampshire lakes is naturally low, generally less than 2 mg/L in surface waters located in remote areas away from habitation. Higher values are generally associated with salted highways and, to a lesser extent, with septic inputs. Please refer to the “Chemical Monitoring Parameters” section of this report for a more detailed explanation.

The **epilimnion** was sampled for chloride during the **July** sampling event. The result was **7.9 mg/L**, which is ***much less than*** the state acute and chronic chloride criteria. However, this concentration is ***greater than*** what we would normally expect to measure in undisturbed New Hampshire surface waters.

The **Bum Carter Cover, North Shore Trib and Outlet** were sampled for chloride on the **July** sampling event. The results were **7.9, 7.6 and 8.1 mg/L**, which is ***much less than*** the state acute and chronic chloride criteria.

We recommend that your monitoring group continue to conduct chloride sampling in the epilimnion at the deep spot, particularly in the spring during snow-melt and rain events during the summer. This will establish a baseline of data that will assist your monitoring group and DES to determine lake quality trends in the future.

*Please note that chloride analyses can be run free of charge at the DES Limnology Center. Please contact the VLAP Coordinator if you are interested in chloride monitoring. In addition, it is best to conduct chloride sampling in the spring as the snow is melting and during rain events.*

➤ **Table 14: Current Year Biological and Chemical Raw Data**

Table 14 in Appendix B lists the most current sampling year results. Since the maximum, minimum, and annual mean values for each parameter are not shown on this table, this table displays the current year “raw,” meaning unprocessed, data. The results are sorted by station, depth, and then parameter.

➤ **Table 15: Station Table**

As of the spring of 2004, all historical and current year VLAP data are included in the DES Environmental Monitoring Database (EMD). To facilitate the transfer of VLAP data into the EMD, a new station identification system had to be developed. While volunteer monitoring groups can still use the sampling station names that they have used in the past and are most familiar with, an EMD station

name also exists for each VLAP sampling location. Table 15 in Appendix B identifies what EMD station name corresponds to the station names you have used in the past and will continue to use in the future.

## **DATA QUALITY ASSURANCE AND CONTROL**

### **Annual Assessment Audit:**

During the annual visit to your lake, the biologist conducted a sampling procedures assessment audit for your monitoring group. Specifically, the biologist observed the performance of your monitoring group and completed an assessment audit sheet to document the volunteer monitors' ability to follow the proper field sampling procedures, as outlined in the VLAP Monitor's Field Manual. This assessment is used to identify any aspects of sample collection in which volunteer monitors failed to follow proper procedures, and also provides an opportunity for the biologist to retrain the volunteer monitors as necessary. This will ultimately ensure samples that the volunteer monitors collect are truly representative of actual lake and tributary conditions.

Overall, your monitoring group did an **excellent** job collecting samples on the annual biologist visit this year! Specifically, the members of your monitoring group followed the proper field sampling procedures and there was no need for the biologist to provide additional training. Keep up the good work!

### **Sample Receipt Checklist:**

Each time your monitoring group dropped off samples at the laboratory this summer, the laboratory staff completed a sample receipt checklist to assess and document if your group followed proper sampling techniques when collecting the samples. The purpose of the sample receipt checklist is to minimize, and hopefully eliminate, improper sampling techniques.

Overall, the sample receipt checklist showed that your monitoring group did an **excellent** job when collecting samples and submitting them to the laboratory this year! Specifically, the members of your monitoring group followed the proper field sampling procedures and there was no need for the laboratory staff to contact your group with questions, and no samples were rejected for analysis.

**USEFUL RESOURCES**

*Best Management Practices to Control Nonpoint Source Pollution: A Guide for Citizens and Town Officials*, DES Booklet WD-03-42, (603) 271-2975 or

[www.des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-03-42.pdf](http://www.des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-03-42.pdf).

*Erosion Control for Construction in the Protected Shoreland Buffer Zone*, DES fact sheet WD-SP-1, (603) 271-2975 or

<http://des.nh.gov/organization/commissioner/pip/factsheets/sp/documents/sp-1.pdf>

*NH Stormwater Management Manual Volume 1: Stormwater and Antidegradation*, DES fact sheet WD-08-20A, (603) 271-2975 or

<http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-08-20a.pdf>

*NH Stormwater Management Manual Volume 2: Post-Construction Best Management Practices Selection and Design*, DES fact sheet WD-08-20B, (603) 271-2975 or

<http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-08-20b.pdf>

*NH Stormwater Management Manual Volume 3: Erosion and Sediment Controls During Construction*, DES fact sheet WD-08-20C, (603) 271-2975 or

<http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-08-20c.pdf>

*Road Salt and Water Quality*, DES fact sheet WD-WMB-4, (603) 271-2975 or

[www.des.nh.gov/organization/commissioner/pip/factsheets/wmb/documents/wmb-4.pdf](http://www.des.nh.gov/organization/commissioner/pip/factsheets/wmb/documents/wmb-4.pdf).

*Sand Dumping - Beach Construction*, DES fact sheet WD-BB-15, (603) 271-2975 or

<http://des.nh.gov/organization/commissioner/pip/factsheets/bb/documents/bb-15.pdf>.

*Watershed Districts and Ordinances*, DES fact sheet WD-WMB-16, (603) 271-2975 or

[www.des.nh.gov/organization/commissioner/pip/factsheets/wmb/documents/wmb-16.pdf](http://www.des.nh.gov/organization/commissioner/pip/factsheets/wmb/documents/wmb-16.pdf).